

IN THE CLAIMS:

- 1 1. (Currently Amended) A method for programming wireless subscriber terminals in
2 a wireless system, the wireless system having a base station in wireless communication
3 with the wireless subscriber terminals using one or more control channels and multiple
4 traffic channels, and each wireless subscriber terminal having a memory, a non-volatile
5 memory, a processor to control operation of the wireless subscriber terminal, the method
6 comprising the steps of:
 - 7 A. transmitting from the base station over a [[control]] point-to-point channel to
8 wireless subscriber terminals information about a new control program including
9 in said information, a number of blocks and a block-size for a firmware image
10 representing said new control program;
 - 11 B. transmitting a [[programmed]] response [[message]] from each individual wire-
12 less subscriber terminal over a [[control]] point-to-point channel to the base sta-
13 tion indicating whether that terminal will be a recipient of the new control pro-
14 gram;
 - 15 C. broadcasting the new control program in a series of identified blocks of data from
16 the base station to the recipient terminals over a control channel for each block in
17 the firmware image;
 - 18 D. polling all of the recipient terminals by the base station over a [[control]] point-to-
19 point channel to determine the transfer status of all blocks of the new control pro-
20 gram at each recipient terminal;
 - 21 E. transmitting a status message from each recipient terminal to the base station indi-
22 cating the status of the reception of the new control program including informa-
23 tion about how many blocks were received of said firmware image and/or a range
24 of blocks missing;
 - 25 F. re-transmitting select missing data blocks to each recipient terminal in response to
26 the individual status messages sent from each recipient terminal that indicate an
27 incomplete transmission and the specific data blocks needed; and

28 G. transferring control of each recipient terminal to said new control program.

1 2. (Cancelled)

1 3. (Previously Presented) The method of claim 1, wherein the step of re-transmitting
2 occurs over one or more point-to-point control channels.

1 4. (Previously Presented) The method of claim 1, wherein the step of re-transmitting
2 occurs over one or more broadcast control channels.

1 5. (Cancelled)

1 6. (Previously Presented) The method of claim 1, wherein the step of transferring con-
2 trol involves performing a series of diagnostic tests at each recipient wireless subscriber
3 terminal to determine the validity of the new control program received at that wireless
4 subscriber terminal.

1 7. (Currently Amended) The method of claim 1, further comprising the step of storing
2 each program segment received in a block of data by the recipient wireless subscriber
3 terminal in the non-volatile memory of the wireless subscriber terminal, whereby the
4 wireless subscriber terminal retains all received program segments if reception of pro-
5 gram segments by the wireless subscriber terminal is interrupted.

1 8. (Previously Presented) The method of claim 1 further comprising the step of storing a
2 pre-existing control program in non-volatile memory after transferring control of the
3 processor to the new control program.

1 9. (Previously Presented) The method of claim 1 wherein the pre-existing control pro-
2 gram and the new control program each comprise a software patch for controlling less
3 than all of the operations of the wireless subscriber terminal.

1 10. (Original) The method of claim 1 wherein the wireless subscriber terminal is a cellu-
2 lar phone.

1 11. (Original) The method of claim 1 wherein the wireless subscriber terminal is a termi-
2 nal of a wireless local loop.

1 12. (Original) The method of claim 1 wherein the step of transferring control to the new
2 control program is forced by the base station during the step of initializing each wireless
3 sub-scriber terminal.

1 13. (Currently Amended) A system for programming wireless subscriber terminals,
2 the system comprising:
3 a base station, the base station having a memory;
4 a control program stored in the memory of the base station;
5 one or more wireless subscriber terminals in wireless communication with the
6 base station over an air interface, the air interface comprising a plurality of traffic chan-
7 nels and a plurality of control channels;
8 means for transmitting from the base station over a point-to-point channel to wire-
9 less subscriber terminals information about a new control program including in said in-
10 formation, a number of blocks and a block-size for a firmware image representing the
11 new control program;
12 means for transmitting a [[programmed]] response [[message]] from each indi-
13 vidual wireless subscriber terminal over a [[control]] point-to-point channel to the base
14 station indicating whether that terminal will be a recipient of the new control program;
15 means for broadcasting the new control program in a series of identified blocks of
16 data from the base station to the recipient terminals over a control channel for each block
17 in the firmware image;

18 means for polling all of the recipient terminals by the base station over a [[con-
19 trol]] point-to-point channel to determine the transfer status of all blocks of the new con-
20 trol program at each recipient terminal;

21 means for transmitting a status message from each recipient terminal to the base
22 station over a control channel indicating the status of the reception of the new control
23 program including information about how many blocks were received and/or a range of
24 blocks missing;

25 means for re-transmitting select missing data blocks to each recipient terminal in
26 response to the individual status messages sent from each recipient terminal indicating an
27 incomplete transmission and the specific data blocks needed; and

28 means for transferring control of each recipient terminal to said new control pro-
29 gram.

1 14. (Original) The system of claim 13, wherein the one or more wireless subscriber ter-
2 minals comprise cellular phone handsets.

1 15. (Original) The system of claim 13, wherein the one or more wireless subscriber ter-
2 minals comprise wireless local loop terminals.

1 16. (Currently Amended) A base station for programming one or more wireless sub-
2 scriber terminals in a wireless system, the base station comprising:

3 a memory;

4 a control program stored in the memory as one or more program segments;

5 a transmitter for transmitting point-to-point forward messages to wireless sub-
6 scriber terminals including information about a new control program over an air inter-
7 face, and [[the]] broadcast forward messages to recipient terminals including a series of
8 identified broadcast firmware block messages including individual blocks of a firmware
9 image which together form a new control program, and forward messages including poll-
10 ing inquiries to recipient terminals over a control channel about the transfer of a new con-

11 trol program to recipient terminals and including the one or more program segments
12 stored in the memory that can be selectively transmitted without regard to sequence;
13 a receiver for receiving reverse messages from wireless subscriber terminals over
14 the air interface, including one or more status messages from recipient terminals over a
15 point-to-point control channel including a [[programmed]] response [[message]] from
16 each individual terminal to said base station indicating whether the terminal will be a re-
17 cipient of the new control program, and messages indicating the status of the reception of
18 all blocks of said firmware image representing said a new control program, or portion
19 thereof; and
20 a processor connected to the memory, the transmitter, and the receiver for control-
21 ling operation of the base station.

1 17. (Original) The base station of claim 16, the forward messages including broadcast
2 firmware start messages and the reverse messages including broadcast firmware start re-
3 sponse messages.

1 18. (Original) The base station of claim 16, the forward messages including broadcast
2 firmware status request messages and the reverse messages including broadcast firmware
3 status messages.

1 19. (Original) The base station of claim 16, the forward messages including firmware
2 switch-over messages.

1 20. (Currently Amended) A method for operating a base station to program one or more
2 wireless subscriber terminals in a wireless system, the method comprising the steps of:
3 A. transmitting from the base station to wireless subscriber terminals information
4 about a new control program, including in said information, a number of
5 blocks and a block-size for a firmware image representing the new control
6 program;

- 7 B. receiving a [[programmed]] response [[message]] from each individual wire-
8 less subscriber terminal over a [[control]] point-to-point channel to the base
9 station indicating whether that terminal will be a recipient of the new control
10 program;
- 11 C. broadcasting the new control program in a series of identified blocks of data
12 from the base station to the recipient terminals over a control channel for each
13 block in the firmware image;
- 14 D. polling all of the recipient terminals over a [[control]] point-to-point channel
15 to determine the transfer status of all blocks of the new control program at
16 each recipient terminal;
- 17 E. receiving a status message from each recipient terminal to the base station
18 over a [[control]] point-to-point channel indicating the status of the reception
19 of the new control program, including information about how many blocks
20 were received and/or a range of blocks missing;
- 21 F. re-transmitting select missing data blocks to each recipient terminal in re-
22 sponse to the individual status messages sent from each recipient terminal that
23 indicates an incomplete transmission and the specific data blocks needed; and
- 24 G. transferring control of each said recipient terminal to said new control pro-
25 gram.

1 21. (Cancelled)

1 22. (Original) The method of claim 20, the step of broadcasting further comprising the
2 step of transmitting one or more broadcast firmware block messages over a broadcast
3 channel.

1 23. (Cancelled)

1 24. (Currently Amended) A wireless subscriber terminal for use in a wireless system, the
2 terminal comprising:

3 a memory;
4 a transmitter for transmitting reverse messages from the terminal over an air inter-
5 face including one or more status messages over a point-to-point [[control]] channel in-
6 cluding transmitting a [[programmed]] response [[message]] to a base station indicating
7 whether the terminal will be a recipient of [[the]] a new control program and messages
8 indicating the status of [[the]] reception of a new control program, or portion thereof in-
9 cluding information relating to missing data blocks from a program transfer;
10 a receiver for receiving forward messages from a base station over a [[control]]
11 channel including point-to-point messages or broadcast messages of a firmware image
12 includes a series of identified blocks of data that comprise the new control program, the
13 forward messages including polling inquiries about the transfer of a new control program
14 to the terminal and including messages concerning the one or more program segments
15 irrespective of their sequence; and
16 a processor connected to the memory, the transmitter, and the receiver for control-
17 ling the terminal, and for storing the one or more program segments in the memory.

1 25. (Original) The terminal of claim 24 wherein the forward messages include broadcast
2 firmware start messages and the reverse messages include broadcast firmware start re-
3 sponse messages

1 26. (Original) The terminal of claim 24 wherein the forward messages include broadcast
2 firmware status request messages and the reverse messages include broadcast firmware
3 status messages.

1 27. (Original) The terminal of claim 24 wherein the forward messages include firmware
2 switch-over messages.

1 28. (Original) The terminal of claim 24 wherein the forward messages including the one
2 or more program segments are broadcast messages.

1 29. (Currently Amended) A method for operating a wireless subscriber terminal in a
2 wireless system to receive a control program, the method comprising the steps of:

- 3 A. receiving from the base station information about a new control program, in-
4 cluding in said information, a number of blocks and a block size for a firm-
5 ware image representing the new control program;
6 B. transmitting a [[programmed]] response [[message]] from each individual
7 wireless subscriber terminal over a [[control]] point-to-point channel to the
8 base station indicating whether that terminal will be a recipient of the new
9 control program;
10 C. receiving the new control program in a series of identified blocks of data
11 through a broadcast from the base station at the recipient terminals;
12 D. receiving a status request at all of the recipient terminals over a [[control]]
13 channel to determine the transfer status of the new control program at each re-
14 cipient terminal, including information about how many blocks were received
15 and/or a range of blocks missing;
16 E. transmitting a status message from each recipient terminal to the base station
17 over a control channel that indicates the status of the reception of the new con-
18 trol program and specific data blocks missing;
19 F. re-receiving select missing data blocks at each recipient terminal from the
20 base station in response to the individual status messages sent from each re-
21 cipient terminal; and
22 G. transferring control of each recipient terminal to said new control program.

1 30. (Cancelled)

1 31. (Previously Presented) The method of claim 29, the step of receiving the new con-
2 trol program further comprising the step of receiving a plurality of firmware block mes-
3 sages over a broadcast channel.

1 32. (Cancelled)

1 33. (Original) The method of claim 29, the step of transferring control further compris-
2 ing the step of receiving a firmware switch-over message.

1 34. (New) The method of claim 1 including transmitting from said base station said in-
2 formation about said new control program that includes at least one of the following:

3 a hardware model;

4 a mask number;

5 a software version number;

6 an ID number which uniquely identifies the transfer; and a force-transfer notifica-
7 tion.